

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

WHAT IS CLAIMED IS:

1. A wireless network device for communicating with a network comprising:
a memory to store an image comprising a plurality of virtual machines and only one
multi-tasking operating system, wherein each of the virtual machines comprises a wireless
5 network application to execute on the multi-tasking operating system;
a processor to execute the virtual machines; and
a port comprising
a physical-layer device to communicate with the network, and
a media access controller to communicate with the physical-layer device and
10 the processor.

2. A wireless network device according to claim 1 which is compliant with a
standard selected from the group consisting of IEEE standards 802.11, 802.11a, 802.11b,
802.11g and 802.11n.

3. The wireless network device of claim 1, wherein the memory comprises a
non-volatile memory, further comprising:
a volatile memory; and
a memory controller to create a copy of the image from the non-volatile memory to
20 the volatile memory;
wherein the processor executes the virtual machines from the volatile memory.

4. The wireless network device of claim 1:
wherein the memory comprises a virtual machine queue for each virtual machine and
25 a processor queue for the processor;
wherein the processor stores data to be processed for the virtual machine being
executed by the processor in the processor queue;
wherein each virtual machine creates a copy in the respective virtual machine queue
of the data in the processor queue when the processor is executing the respective virtual
30 machine; and

wherein when the processor resumes executing one of the virtual machines after executing another of the virtual machines, the one of the virtual machines copies the data from the respective virtual machine queue to the processor queue.

5 5. The wireless network device of claim 1, wherein the wireless network applications are selected from the group consisting of:

- a wireless network access point;
- a wireless network client;
- a wireless network point-to-point bridge;
- 10 a wireless network multi-point bridge; and
- a wireless network repeater.

6. The wireless network device of claim 1, wherein the image further comprises:
a plurality of virtual machine device drivers to communicate with the virtual
15 machines; and

a media access controller device driver to communicate with the virtual machine device drivers and the media access controller.

7. The wireless network device of claim 1, further comprising:
20 an input device to select one or more of the virtual machines;
wherein the processor executes the virtual machines selected by the input device.

8. The wireless network device of claim 1, wherein the processor executes a plurality of the virtual machines concurrently.

25 9. The wireless network device of claim 1:
wherein the virtual machines comprise a wireless network access point virtual machine and a wireless network client virtual machine;
wherein the processor executes the wireless network access point virtual machine and
30 the wireless network client virtual machine concurrently;
wherein the wireless network client virtual machine comprises

a first virtual wireless port to communicate with the port, and
a first virtual bridge to communicate with the first virtual wireless port; and
wherein the wireless network access point virtual machine comprises
a second virtual wireless port to communicate with the port,
5 a virtual distribution service port to communicate with the first virtual bridge,
and
a second virtual bridge to communicate with the second virtual wireless port
and the virtual distribution service port.

10 10. A method for a wireless network device for communicating with a network
comprising:

storing an image comprising a plurality of virtual machines and only one multi-
tasking operating system, wherein each of the virtual machines comprises a wireless network
application to execute on the multi-tasking operating system; and

15 executing the virtual machines.

11. The method of claim 10, wherein the wireless network device is compliant
with a standard selected from the group consisting of IEEE standards 802.11, 802.11a,
802.11b, 802.11g and 802.11n.

20 12. The method of claim 10, wherein the image is stored in a non-volatile
memory, further comprising:

copying the image from the non-volatile memory to a volatile memory; and
wherein the virtual machines are executed from the volatile memory.

25 13. The method of claim 10, further comprising:
creating in the volatile memory a virtual machine queue for each virtual machine and
a processor queue for a processor;

30 storing in the processor queue data to be processed for the virtual machine being
executed;

creating a copy in the respective virtual machine queue of the data in the processor queue when the respective virtual machine is executing; and

wherein when one of the virtual machines resumes executing after another of the virtual machines was executing, copying the data from the respective virtual machine queue to the processor queue.

14. The method of claim 10, wherein the wireless network applications are selected from the group consisting of:

- a wireless network access point;
- a wireless network client;
- a wireless network point-to-point bridge;
- a wireless network multi-point bridge; and
- a wireless network repeater.

15. The method of claim 10, further comprising:
executing selected ones of the virtual machines in accordance with an input.

16. The method of claim 10, further comprising:
executing a plurality of the virtual machines concurrently.

17. A wireless network device for communicating with a network comprising:
a memory to store an image comprising a plurality of virtual machines and only one
5 multi-tasking operating system, wherein each of the virtual machines comprises a wireless
network application to execute on the multi-tasking operating system;
a processor to execute the virtual machines; and
a bus to communicate with the processor and the network.

10 18. A wireless network device according to claim 17 which is compliant with a
standard selected from the group consisting of IEEE standards 802.11, 802.11a, 802.11b,
802.11g and 802.11n.

15 19. The wireless network device of claim 17, wherein the memory comprises a
non-volatile memory, further comprising:
a volatile memory; and
a memory controller to create a copy of the image from the non-volatile memory to
the volatile memory;
wherein the processor executes the virtual machines from the volatile memory.

20 20. The wireless network device of claim 17:
wherein the memory comprises a virtual machine queue for each virtual machine and
a processor queue for the processor;
wherein the processor stores data to be processed for the virtual machine being
25 executed by the processor in the processor queue;
wherein each virtual machine creates a copy in the respective virtual machine queue
of the data in the processor queue when the processor is executing the respective virtual
machine; and
wherein when the processor resumes executing one of the virtual machines after
30 executing another of the virtual machines, the one of the virtual machines copies the data
from the respective virtual machine queue to the processor queue.

21. The wireless network device of claim 17, wherein the image further comprises:

a plurality of virtual machine device drivers to communicate with the virtual
5 machines; and
a bus interface driver to communicate with the virtual machine device drivers and the bus.

22. The wireless network device of claim 17, further comprising:

10 a physical-layer device to communicate with the network; and
a media access controller to communicate with the physical-layer device and the bus.

23. The wireless network device of claim 22, wherein the image further comprises:

15 a plurality of virtual machine device drivers to communicate with the virtual machines;
a first bus interface driver to communicate with the virtual machine device drivers and the bus;

a second bus interface driver to communicate with the bus; and

20 a media access controller device driver to communicate with the second bus interface driver and the media access controller.

24. The wireless network device of claim 17, wherein the wireless network applications are selected from the group consisting of:

25 a wireless network access point;
a wireless network client;
a wireless network point-to-point bridge;
a wireless network multi-point bridge; and
a wireless network repeater.

30 25. The wireless network device of claim 17, further comprising:

an input device to select one or more of the virtual machines;
wherein the processor executes the virtual machines selected by the input device.

26. The wireless network device of claim 17, wherein the processor executes a
5 plurality of the virtual machines concurrently.

27. The wireless network device of claim 17:
wherein the virtual machines comprise a wireless network access point virtual
machine and a wireless network client virtual machine;
10 wherein the processor executes the wireless network access point virtual machine and
the wireless network client virtual machine concurrently;
wherein the wireless network client virtual machine comprises
a first virtual wireless port to communicate with the port, and
a first virtual bridge to communicate with the first virtual wireless port; and
15 wherein the wireless network access point virtual machine comprises
a second virtual wireless port to communicate with the port,
a virtual distribution service port to communicate with the first virtual bridge,
and
a second virtual bridge to communicate with the second virtual wireless port and the
20 virtual distribution service port.